

CLAIM AMENDMENTS

This listing of the claims will replace all prior versions, and listing, of claims in the application or previous response to office action:

1. (Currently Amended) A fuel injection valve for injecting fuel into the combustion chamber of an internal combustion engine, said fuel injection valve comprising:

a valve body having a tip, said tip containing injection orifices and a valve needle, said valve needle disposed in an axially displaceable manner in the valve body for opening and closing the injection valve, and a cone located at the tip of the valve needle for selectively blocking a fuel path to the injection orifices, wherein each injection orifice has a respective groove-shaped recess in the cone [[tip]] of the valve needle.

2. (Original) A fuel injection valve according to Claim 1, wherein each recess has a width which corresponds at least to a diameter of an injection orifice.

3. (Original) A fuel injection valve according to Claim 1, wherein each recess has a stepped contour.

4. (Original) A fuel injection valve according to Claim 3, wherein each recess has a curvilinear cross-section.

5. (Currently Amended) A fuel injection valve according to Claim 1, wherein the ~~nozzle~~ valve needle has a guide for reducing rotational movements.

6. (Original) A fuel injection valve according to Claim 5, wherein the guide is a slot-and-key guide.

7. (Original) A fuel injection valve according to Claim 5, wherein a featherkey engages in a needle guide of the valve needle in a guide groove in a hollow cylindrical guide surface in the valve body.

8. (Original) A fuel injection valve according to Claim 5, wherein the guide is a longitudinal guide.

9. (Original) A fuel injection valve according to Claim 1, wherein each recess has an arched contour.

10. (Original) A fuel injection valve according to Claim 9, wherein each recess has a semicircular cross-section.

11. (Original) A fuel injection valve according to Claim 1, wherein the recesses of the injection orifices are adapted to compensate for asymmetrical flow conditions.

12. (Original) A fuel injection valve according to Claim 1, wherein the recesses are of triangular cross-section.

13. (Original) A fuel injection valve according to Claim 1, wherein a bottom edge of each recess lies at approximately the same height as a bottom edge of each orifice.

14. (New) A fuel injection valve for injecting fuel into the combustion chamber of an internal combustion engine, said fuel injection valve comprising:

a valve body having a tip, said tip containing injection orifices and a valve needle, said valve needle disposed in an axially displaceable manner in the valve body for opening and closing the injection valve, and a cone located at the tip of the valve needle for selectively blocking a fuel path to the injection orifices, wherein each injection orifice has a respective groove-shaped recess in the tip of the valve needle, each recess corresponding to one injection orifice.

15. (New) A fuel injection valve according to Claim 14, wherein each recess has a width which corresponds at least to a diameter of an injection orifice.

16. (New) A fuel injection valve according to Claim 14, wherein the valve needle has a guide for reducing rotational movements.

17. (New) A fuel injection valve according to Claim 14, wherein a bottom edge of each recess lies at approximately the same height as a bottom edge of each orifice.

18. (New) A fuel injection valve for injecting fuel into the combustion chamber of an internal combustion engine, said fuel injection valve comprising:

a valve body having a tip, said tip containing a plurality of injection orifices and a valve needle, said valve needle disposed in an axially displaceable manner in the valve body for opening and closing the injection valve, and a cone located at the tip of the valve needle for selectively blocking a fuel path to the injection orifices, wherein each of the plurality of injection orifices has a respective one of a plurality of groove-shaped recesses in the tip of the valve needle.

19. (New) A fuel injection valve according to Claim 18, wherein each of the plurality of recesses has a width which corresponds at least to a diameter of an injection orifice.

20. (New) A fuel injection valve according to Claim 18, wherein the valve needle has a guide for reducing rotational movements.